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Anthony H. Azure
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

EXAMINER
PATEL, JAY P

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/748,429	KUMAR ET AL.	
	Examiner	Art Unit	
	JAY P. PATEL	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>19 December 2007</u>.

2a)☒ This action is **FINAL**.　　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-28</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-28</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some *　c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 20-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bass et al. (US Patent 6272134 B1).

In regards to claim 20, figure 3 is inclusive of a receive frame I/O logic 302 (a receiver to receive an incoming multicast packet comprising packet data), a frame memory 300 (a first memory unit couple to the receiver, the first memory unit to store the packet data), a protocol processing logic 304 (a copy block to manage a plurality of outgoing multicast headers stored in a second memory unit of the network device), multicast / unicast logic 306 (a packet processing unit to process unicast and multicast packets passing through the router) and a transmit frame I/O logic (a transmitter operatively coupled to the packet processing unit).

In regards to claims 21 and 24, figure 3 is inclusive of a protocol processing logic 304.

In regards to claim 22, memory is freed at step 1011 in figure 10 as queues are emptied.

In regards to claim 23, at step 910, child count is incremented.

In regards to claim 25, figure 3 is a high level architecture of a device the supports multicast and unicast frames.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-19 and 26-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bass et al. (US Patent 6272134 B1).

        In regards to claims 1 and 26, figure 9 illustrates a high level multicast routing

procedure at processing logic 304 (a processor) of figure 3 (network device). Figure 3

also includes receive logic 302 (receiving an incoming multicast packet at a network

device) and frame memory 300 (storing the packet data at the network device)

        Figure 9, illustrates how multiple unique header frames are built and at step 902,

a determination is made as to whether the frame header needs to be modified

(incoming multicast packet comprising an incoming multicast header and packet data).

        At step 908 if additional frames are necessary with unique headers, at step 910,

new copies of frames with the unique headers are produced (generating a plurality of

outgoing multicast headers based on the incoming multicast header and attaching the

headers to the packet to create a plurality of multicast packets).

        Figure 9, fails to teach creating a plurality of outgoing multicast packets w/o

making multiple copies of the packet data. However, this concept is taught in the

embodiment of figure 6 where a frame buffer pointer, points to the actual portion of a
received frame (see column 12, lines 7-10).

Therefore, it would have been obvious to one skilled in the art at the time the
invention was made to carry out the process illustrated in figure 9 without making copies
of the packet data and instead use a frame buffer pointer to point to the frame as taught
with respect to figure 6. The motivation to do so would be save processing time by
avoiding replicating the packet data.

In regards to claims 2 and 3, figure 3 is inclusive of a frame memory 300.

In regards to claims 4 and 5, the use of pointers FPV and BPV is employed in
step 910.

In regards to claim 6, figure 3 is inclusive of a protocol processing logic 304.

In regards to claim 7, a child count is incremented at step 910.

In regards to claims 8-10, memory is freed at step 1011 in figure 10 as queues
are emptied.

In regards to claim 11, figure 3 is a high level architecture of a device the
supports multicast and unicast frames.

In regards to claim 12, figure 9 illustrates a high level multicast routing procedure
at processing logic 304 (a processor) of figure 3 (network device). Figure 3 also
includes receive logic 302 (receiving an incoming multicast packet at a network device)
and frame memory 300 (storing the packet data at the network device)

Figure 9, illustrates how multiple unique header frames are built and at step 902, a determination is made as to whether the frame header needs to be modified (incoming multicast packet comprising an incoming multicast header and packet data).

At step 908 if additional frames are necessary with unique headers, at step 910, new copies of frames with the unique headers are produced (generating a plurality of outgoing multicast headers based on the incoming multicast header and attaching the headers to the packet to create a plurality of multicast packets). Furthermore, the constructed data frames are transmitted from the node (see abstract section, last sentence).

Figure 9, fails to teach creating a plurality of outgoing multicast packets w/o making multiple copies of the packet data. However, this concept is taught in the embodiment of figure 6 where a frame buffer pointer, points to the actual portion of a received frame (see column 12, lines 7-10).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to carry out the process illustrated in figure 9 without making copies of the packet data and instead use a frame buffer pointer to point to the frame as taught with respect to figure 6. The motivation to do so would be save processing time by avoiding replicating the packet data.

The use of pointers FPV and BPV anticipates storing the plurality of outgoing multicast headers in a corresponding plurality of child buffers.

The transmit frame logic 308 anticipates transmitting the outgoing multicast packet.

In regards to claim 13, figure 3 is inclusive of frame memory 300.

In regards to claim 14, figure 3 is also inclusive of protocol processing logic 304
and multicast/unicast solution logic 306.

In regards to claims 15 and 18, memory is freed at step 1011 in figure 10 as
queues are emptied.

In regards to claims 16 and 17, at step 910, child count is incremented.

In regards to claim 19, figure 3 is inclusive of a receive frame I/O logic 302.

In regards to claim 27, figure 3 is inclusive of a transmit frame I/O logic 308.

In regards to claim 28, figure 1 has multiple endpoints from the central node 100.

Response to Arguments

5.   Applicant's arguments filed 12/19/2007 have been fully considered but they are
not persuasive. With regards to claim 12, the applicant's amendment to claim 12
prompted the examiner to give a new ground for rejection. The examiner disagrees with
the applicant's insistence that Bass fails to teach, creating multiple copies of the packets
without making multiple copies of the packet data. Bass further states that the
arrangements of figure 6 "require virtually no additional storage other than that originally
necessary for the unicast frame" (see column 12, lines 12-15). Therefore, if the same
storage for is used with regards to a multicast frame as that is necessary for a unicast
frame, then multiple copies of a frame can not be made because the storage necessary
to store multiple copies isn't present. Furthermore, the applicant cites sections (namely
the sections of column 6 which pertain to figure 3) within Bass that seem to contradict

the language of claim 12 however chooses to ignore the pointer structures that are illustrated in figures 5-7 which point to different parts of the frame.

6.   Furthermore the same argument is presented with regards to claim 1. Therefore, the above-mentioned argument with regards to claim 12 is also relevant to claim 1.

7.   In regards to claim 20, the applicant argues that no second memory unit is present. However, the examiner states that a second memory unit is also anticipated by a frame memory 300 where unicast and multicast frames are stored (see column 6, lines 41-42). Furthermore, the examiner's logic behind this argument is that the second memory unit according to claim 20 serves no other purpose than storing multicast headers. Furthermore, in the disclosure of Bass, the frame is inclusive of the header and body (see figure 2).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAY P. PATEL whose telephone number is (571)272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jay P. Patel
Examiner
Art Unit 2619

/Jay P. Patel/
Examiner, Art Unit 2619

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2619